



[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No. FAA-2015-2002; Special Conditions No. 25-593-SC]

Special Conditions: Bombardier Inc. Model BD-700-2A12 and BD-700-2A13

Airplanes; Flight Envelope Protection, High-Speed Limiting

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions; request for comments.

SUMMARY: These special conditions are issued for the Bombardier Inc. Model BD-700-2A12 and BD-700-2A13 airplanes. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

DATES: This action is effective on Bombardier Inc. on **[Insert date of publication in the Federal Register]**. We must receive your comments by **[Insert date 45 days after date of publication in the Federal Register]**.

ADDRESSES: Send comments identified by docket number FAA-2015-2002 using any of the following methods:

- *Federal eRegulations Portal:* Go to <http://www.regulations.gov/> and follow the online instructions for sending your comments electronically.

- *Mail:* Send comments to Docket Operations, M-30, U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE., Room W12-140, West Building Ground Floor, Washington, DC, 20590-0001.
- *Hand Delivery or Courier:* Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 8 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- *Fax:* Fax comments to Docket Operations at 202-493-2251.

Privacy: The FAA will post all comments it receives, without change, to <http://www.regulations.gov/>, including any personal information the commenter provides. Using the search function of the docket Web site, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the **Federal Register** published on April 11, 2000 (65 FR 19477-19478), as well as at <http://DocketsInfo.dot.gov/>.

Docket: Background documents or comments received may be read at <http://www.regulations.gov/> at any time. Follow the online instructions for accessing the docket or go to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Joe Jacobsen, FAA, Airplane and Flight Crew Interface, ANM-111, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue SW., Renton, Washington, 98057-3356; telephone 425-227-2011; facsimile 425-227-1149.

SUPPLEMENTARY INFORMATION:

The FAA has determined that notice of, and opportunity for prior public comment on, these special conditions is impracticable because these procedures would significantly delay issuance of the design approval and thus delivery of the affected airplanes.

In addition, the substance of these special conditions has been subject to the public-comment process in several prior instances with no substantive comments received. The FAA therefore finds that good cause exists for making these special conditions effective upon publication in the **Federal Register**.

Comments Invited

We invite interested people to take part in this rulemaking by sending written comments, data, or views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data.

We will consider all comments we receive by the closing date for comments. We may change these special conditions based on the comments we receive.

Background

On May 30, 2012, Bombardier Aerospace Inc. applied for a type certificate for their new Model BD-700-2A12 and BD-700-2A13 airplanes. These airplanes are derivatives of the Model BD-700 series airplanes. These two models are marketed as the Bombardier Global 7000 and Global 8000, respectively. These are ultra-long-range, executive-interior business jets, with a maximum certified passenger capacity of 19.

The Global 7000 and Global 8000 airplanes will be assembled without a completed interior in Toronto, Ontario, and flight tested at the Bombardier Flight Test Center in Wichita, Kansas. Like the existing BD-700 airplanes, Global 7000 and Global 8000 custom passenger

interiors and airplane delivery will be provided from Montreal, Quebec, via supplemental type certificate.

The Global 7000 and Global 8000 share an identical supplier base and significant design-element commonality, the highlights of which are:

- Two GE PassportTM 20 aft-mounted engines
- New high-speed transonic wing
- Fly-by-wire control system with side-stick controls
- Pro Line Fusion[®] avionics suite

Both the Model BD-700-2A12 and -2A13 airplanes have a wingspan of 104.1 feet, a height of 26.7 feet, a maximum operating altitude of 51,000 feet, a maximum operating speed of 340 knots, and a maximum fuselage diameter of 8.84 feet. The BD-700-2A12 is 111.9 feet long, with a maximum take-off weight of 106,250 pounds; and the -2A13 is 102.9 feet in length at 104,800 pounds.

The longitudinal control-law design of both airplane designs incorporate a high-speed protection system in the normal mode; this would prevent the pilot from inadvertently or intentionally exceeding a speed approximately equivalent to V_{FC} or attaining V_{DF} . Current Title 14, Code of Federal Regulations (14 CFR) part 25 sections do not relate to a high-speed limiter that might preclude or modify flying-qualities assessments in the high-speed region.

Type Certification Basis

Under the provisions of 14 CFR 21.17, Bombardier Inc. must show that the Model BD-700-2A12 and BD-700-2A13 airplanes meet the applicable provisions of part 25 as amended by Amendments 25-1 through 25-129.

If the Administrator finds that the applicable airworthiness regulations (i.e., 14 CFR part 25) do not contain adequate or appropriate safety standards for the Model BD-700-2A12 and BD-700-2A13 airplanes because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual design feature, these special conditions would also apply to the other model under § 21.101.

In addition to the applicable airworthiness regulations and special conditions, the Model BD-700-2A12 and BD-700-2A13 airplanes must comply with the fuel-vent and exhaust-emission requirements of 14 CFR part 34, and the noise-certification requirements of 14 CFR part 36; and the FAA must issue a finding of regulatory adequacy under § 611 of Public Law 92-574, the “Noise Control Act of 1972.”

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type-certification basis under § 21.17(a)(2).

Novel or Unusual Design Features

The Bombardier Model BD-700-2A12 and BD-700-2A13 airplanes will incorporate the following novel or unusual design feature:

An electronic flight-control system that contains fly-by-wire control laws, including envelope protections, for high-speed protection functions. Current part 25 requirements do not contain appropriate standards for high-speed protection systems.

Discussion

Model BD-700-2A12 and BD-700-2A13 airplanes are equipped with a high-speed protection system, which, when the system detects airspeed exceeding a small tolerance above V_{MO}/M_{MO} , employs a high-speed limiter to automatically deploy multifunction spoilers (MFS) as speed brakes. The MFS retract automatically when the system detects that airspeed is sufficiently reduced.

These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

Applicability

As discussed above, these special conditions are applicable to the Bombardier Model BD-700-2A12 and BD-700-2A13 airplanes. Should Bombardier Inc. apply at a later date for a change to the type certificate to include another model incorporating the same novel or unusual design feature, these special conditions would apply to that model as well.

Conclusion

This action affects only certain novel or unusual design features on Bombardier Model BD-700-2A12 and BD-700-2A13 airplanes. It is not a rule of general applicability.

The substance of these special conditions has been subjected to the notice and comment period in several prior instances and has been derived without substantive change from those previously issued. It is unlikely that prior public comment would result in a significant change from the substance contained herein. Therefore, because a delay would significantly affect the certification of the airplane, the FAA has determined that prior public notice and comment are unnecessary and impracticable, and good cause exists for adopting these special conditions upon

publication in the **Federal Register**. The FAA is requesting comments to allow interested persons to submit views that may not have been submitted in response to the prior opportunities for comment described above.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

The authority citation for these special conditions is as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

The Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for Bombardier Model BD-700-2A12 and BD-700-2A13 airplanes. The requirements of § 25.253 (high-speed characteristics), and its related policy, are applicable to the Model BD-700-2A12 and BD-700-2A13 airplanes, and are not affected by these special conditions.

In addition to § 25.143, the following requirement applies:

Operation of the high-speed limiter during all routine and descent procedure flight must not impede normal attainment of speeds up to high-speed warning.

Issued in Renton, Washington, on August 7, 2015.

Michael Kaszycki

Acting Manager, Transport Airplane Directorate

Aircraft Certification Service

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